Lesson 12 – Discussion

**Data Structures in Python**

There are four built-in data structures in Python - list, tuple, dictionary and set.

Please discuss how to use the various data structures categories.

<https://python.swaroopch.com/data_structures.html>

List: a list holds an ordered collection of items. Lists are mutable, meaning they can be modified. This makes lists very versatile. Each item in a list can be accessed by the items position in the list. This is specified with a number inside of brackets, and is called the indexing operator.

Tuple: a tuple is similar to a list, but is used to hold together multiple objects. They are immutable, meaning their collection of values cannot be changed. In the same way as lists, tuples values/objects are accessed using the indexing operator.

Dictionary: these are described as address books that allow you to find details of a person by knowing the person’s name. Keys, the person’s name, are associated with values, the person’s details. Similar to primary keys in a database table, these keys must be unique in order to find the correct information for each person.

Set: a set consists of a collection of unique and immutable objects. Unlike lists and tuples, sets are unordered. So, where each object is located in the list is irrelevant. This data structure would be useful when you need to keep track of a list of items/objects, but also don’t need that list to be in any particular order.

Sequence: this is simply the generic term for an ordered set. There are multiple kinds of sequences in Python, and some of which we’ve already discussed. Lists and Tuples are both examples of a sequence. The major features of a sequence are membership tests, indexing operations, and slicing operations.